Reliable®

Model LP Dry Pilot Actuator

Product Description

The Reliable Model LP Dry Pilot Actuator is a differential-style diaphragm operated valve designed to separate water and air (or nitrogen) for use as a release mechanism on Reliable dry pipe, deluge, and preaction systems. The Model LP Dry Pilot Actuator is provided with a ½" NPT inlet water inlet for connection to a hydraulic release system, a ½" NPT air/nitrogen inlet, and a ½" NPT water outlet for routing to drain.

In the set-up condition, dry pilot line (or dry pipe system) pneumatic pressure acts on the diaphragm across a larger surface area than the water pressure on the opposite side of the diaphragm. This allows lower pneumatic pressure to seal the diaphragm against higher hydraulic pressure. Table A specifies the air or nitrogen pressure to be constantly applied to the actuator.

When pneumatic pressure is lost (for example, when a dry pilot thermal detector opens), the incoming water pressure overcomes the differentially-applied pneumatic pressure and the diaphragm is forced off the water seat. This allows water to move through the actuator. The release of hydraulic pressure in turn allows the deluge or mechanical dry-pipe valve to operate.

Installation

The Model LP Dry Pilot Actuator shall only be installed as a releasing device on Reliable deluge, preaction, and dry-pipe systems where designated for such use on related technical bulletins.

The Model LP Dry Pilot Actuator shall be installed in accordance with NFPA 13, ***Standard for the Installation of Sprinkler Systems***, as well as the requirements of any authorities having jurisdiction. Failure to follow instructions may result in failure of the valve or system to operate, and may void the warranty and/or listing of the system.

Prior to installation, verify compatibility of the Model LP Dry Pilot Actuator materials with the water supply and the environment where the valve will be installed.

The device must be installed in a readily visible and accessible location where a minimum temperature of 40°F (4°C) or above must be maintained. Heat tracing of the Model LP Dry Pilot Actuator and trim is not permitted.



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Maintenance

The Reliable Model LP Dry Pilot Actuator shall periodically be given a thorough inspection and test. NFPA 25, ***Inspection, Testing, and Maintenance of Water Based Fire Protection Systems***, provides minimum maintenance requirements.

The owner is responsible for maintaining all parts of the fire protection system in proper operating condition. Any system maintenance or testing that involves placing a system component out of service may eliminate the fire protection that is provided by the fire protection system.

Full flow of water through the actuator is required during set-up to flush debris away from the seat. If the actuator does not seal leak-free when pressurized with the correct amount of air/nitrogen pressure, there is a leak at the actuator seat. Inspect, clean, and replace parts as necessary following these steps:

1. Close the main valve controlling water supply to the system.
2. Close the air or nitrogen supply to the system and bleed pneumatic pressure from the system.
3. Remove the actuator from the system.
4. Carefully remove the six bolts holding the actuator together. (**Note:** The actuator incorporates a spring that will be forcing the actuator halves apart.)
5. Inspect and clean internal parts. (**Note:** Use a torque of 8 lbf-ft on the facing plate nut.)
6. Reassemble the actuator using a cross-tightening pattern and a torque of 12 lbf-ft on the bolts.
7. Reinstall the actuator and set up the fire protection system in accordance with the appropriate technical bulletin.

System Pneumatic Pressure **Table A**

Maximum Water Pressure psi (bar)	Minimum Air/Nitrogen Pressure psi (bar)
20 (1.4)	8 (0.6)[2]
30 (2.1)	10 (0.7)[2]
50 (3.4)	12 (0.8)[2]
75 (5.2)	13 (0.9)
100 (6.9)	15 (1.0)
125 (8.6)	16 (1.1)
150 (10.3)	17 (1.2)
175 (12.1)	18 (1.2)
200 (13.8)	19 (1.3)
225 (15.5)	21 (1.4)
250 (17.2)	22 (1.5)
275 (19.0)	23 (1.6)
300 (20.7)	24 (1.7)

Notes:

1. Pneumatic pressure less than the minimum specified will result in inadvertent operation of the system.
2. Pneumatic pressure higher than the minimum specified may result in delayed operation of the system.
Caution! Where the maximum water pressure is 20 psi (1.4 bar), 30 psi (2.1 bar) or 50 psi (3.4 bar) the maximum pneumatic pressure cannot exceed the 10 psi (.7 bar) 14 psi (1 bar) and 16 psi (1.1 bar) respectively. This may prohibit the use of a tank-less air compressor (see note 4).
3. The use of a listed pressure maintenance device such as the Reliable Model A or Model DD in conjunction with a tank-mounted air compressor or nitrogen generator incorporating a tank is highly recommended, even for single systems. (This is an NFPA 13 requirement for multiple systems fed from a common source.)
4. Where a tank-less compressor is used, the "start/on" setting of the pressure switch shall not be less than the minimum pneumatic pressure in the table. The "stop/off" pressure will be determined by the required differential of the compressor pressure switch.
5. During set-up, higher pneumatic pressure may temporarily be required to set the Model LP Actuator. Following set-up, lower the pneumatic pressure of the system to be in accordance with the table.
6. In no case should the pneumatic pressure exceed 30 psi (2.1 bar) to prevent damage to the actuator diaphragm.

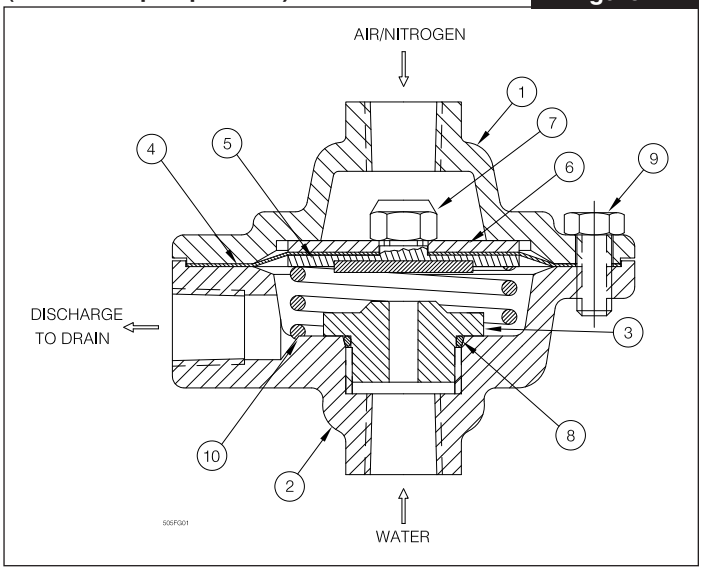
LP Dry Pilot Actuator Characteristics **Table B**

Maximum Water Pressure psi (bar)	Nominal Trip Point psi (bar)
20 (1.4)	5 (0.36)
30 (2.1)	5 (0.36)
50 (3.4)	7 (0.51)
75 (5.2)	9 (0.63)
100 (6.9)	10 (0.72)
125 (8.6)	11 (0.78)
150 (10.3)	12 (0.83)
175 (12.1)	13 (0.9)
200 (13.8)	13 (0.9)
225 (15.5)	14 (1)
250 (17.2)	14 (1)
275 (19.0)	14 (1)
300 (20.7)	14 (1)

Note:

1. The Dry Pilot Actuator differential should be used as the "Dry Valve Differential" for valves using the Reliable Model LP Dry Pilot Actuator. Actual trip points may vary ± 2 psi due to the design of the actuator.

Model LP Dry Pilot Line Actuator (shown in open position) **Figure 1**



Model LP Dry Pilot Line Actuator Parts List

Item No.	Description	Qty. Required
1	Lower Housing	1
2	Upper Housing	1
3	Seat	1
4	Diaphragm	1
5	Facing Plate Assembly	1
6	Diaphragm Washer	1
7	Facing Plate Nut	1
8	Seat O-Ring	1
9	Bolt	6

Note: Parts list provided for reference only. Individual parts are not available for purchase.

Guarantee

For the Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify:

- Model LP Dry Pilot Actuator (P/N 71030010)

P/N 9999970538